

**Monthly Letter Progress Report #14:  
Period 9, Fiscal Year 2017  
Study of Brackish Aquifers in Texas –  
Project No. 4 –Trinity Aquifer  
TWDB Contract No. 1600011950**

*Submitted to*

Texas Water Development Board  
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**Monthly Letter Progress Report #15**  
**May 13, 2017 - June 9, 2017**  
**Study of Brackish Aquifers in Texas – Project No. 4 –**  
**Trinity Aquifer**  
**TWDB Contract No. 1600011950**

## **1.0 Budget and Expenses**

This report summarizes the project status and costs for the billing period from Contract Approval Date (January 6, 2016) through the end of Period 9 of Fiscal Year 2017 (June 9, 2017). The total expenses through this period are \$134,009.82. A breakdown of the budget by task is provided in Table 1. A copy of the progress report has been sent to Texas Water Development Board (TWDB) along with the monthly invoice.

## **2.0 Progress on Tasks**

This report summarizes activities on project tasks during Fiscal Year 2017, Period 9 (encompassing May 13, 2017-June 9, 2017) and represents the fifteenth progress report on this contract.

### **Task 1: Project Management**

No work was performed on this task during this reporting period.

### **Task 2: Data Acquisition and Method Development**

Task 2 has been subdivided into four subtasks. Progress on activities for the subtasks is as follows:

#### **Subtask 2.1 Acquisition and Initial Analysis of Groundwater Samples**

Work on this subtask has been completed.

#### **Subtask 2.2 Acquisition and Initial Analysis of Geophysical Logs**

Work on this subtask has been completed. Geophysical logs have been correlated with chemical-analysis data. Work on the well log database containing spatial attributes of all logs utilized in this study, with care to adhere to BRACS format, has been completed. The project database of water-quality data relevant to the project domain was finalized, and hydrochemical facies analyses for the project are complete.

Subtask 2.3 Develop Technical Approach for Estimating Total Dissolved Solids from Geophysical Logs

Work on this subtask has been completed. The technical approach for estimating total dissolved solids from geophysical logs which was developed for this project was implemented using available geophysical logs.

Subtask 2.4 Use Geophysical Log Interpretation to Analyze Stratigraphy and Map Fresh, Brackish, and Saline Groundwater

Work on this subtask has been completed. Gamma ray logs were used to help complete the stratigraphic framework model. In addition, resistivity and SP logs enabled stratigraphic interpretation at wells without a gamma curve. Resistivity and SP logs provide the main basis for salinity analyses. SP data are mostly limited to sand-dominated units such as the Hosston and Hensell formations, but have been effective for some Cow Creek producing zones. Digitized porosity logs (neutron and sonic) were additionally evaluated for use in this study.

**Task 3: Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes**

Task 3 has been subdivided into two subtasks. Progress on activities for the subtasks is as follows:

Subtask 3.1 Extend Stratigraphy for the Hill Country Trinity

Work on this subtask has been completed. The stratigraphic framework has been completed and finalized.

Subtask 3.2 Determine Volumes of Fresh, Brackish, and Saline Groundwater

Work on this subtask has been completed. Evaluation of the relationship between electrical resistivity and fluid salinity was completed during this period. The determination of TDS from digitized well log curves is complete.

**Task 4: Delineate Potential Production Areas**

Work on this subtask has been completed. Team members have finished the delineation of the potential production zones.

**Task 5: Determine the Amount of Brackish Groundwater that can be Produced without Causing Impact on Lateral and Vertical Fresh Water**

Work on this subtask has been completed. Team members have completed groundwater

modeling within the Trinity Aquifer using stratigraphic and geochemical data to constrain the model domain.

### **Task 6: Stakeholder Communication**

No work was performed on this subtask during this reporting period.

### **Task 7: Reporting**

Task 7 has been subdivided into 2 subtasks. Progress on the subtasks is as follows:

#### **Subtask 7.1 Project Monitoring Procedures**

The project timeline has been reviewed frequently. The project budget has been monitored on a weekly basis using the SwRI Project Cost System. Project activity for each period is summarized in status reports for review by TWDB.

#### **Subtask 7.2 Project Deliverables**

Progress on this task during this reporting period has included preparing and delivering “Monthly Letter Progress Report #14: Period 8, Fiscal Year 2017.”

Work on the Draft Final Report has continued.

## **3.0 Planned Activities for the Next Reporting Period (Fiscal Year 2017, Period 10)**

### **Task 1: Project Management**

The agreements with the two in-kind teaming partners, EAA and BSEACD, will be submitted to TWDB as soon as they have been finalized.

### **Task 2: Data Acquisition and Method Development**

Task 2 has been subdivided into four subtasks. Planned activities for the subtasks are as follows:

#### **Subtask 2.1 Acquisition and Initial Analysis of Groundwater Samples**

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

#### **Subtask 2.2 Acquisition and Initial Analysis of Geophysical Logs**

Work on this subtask has been completed; no work on this task is expected to occur over the next

reporting period.

Subtask 2.3 Develop Technical Approach for Estimating Total Dissolved Solids from Geophysical Logs

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

Subtask 2.4 Use Geophysical Log Interpretation to Analyze Stratigraphy and Map Fresh, Brackish, and Saline Groundwater

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

**Task 3: Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes**

Task 3 has been subdivided into two subtasks. Planned activities for the subtasks are as follows:

Subtask 3.1 Extend Stratigraphy for the Hill Country Trinity

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

Subtask 3.2 Determine Volumes of Fresh, Brackish, and Saline Groundwater

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

**Task 4: Delineate Potential Production Areas**

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

**Task 5: Determine the Amount of Brackish Groundwater that can be Produced without Causing Impact on Lateral and Vertical Fresh Water**

Work on this subtask has been completed; no work on this task is expected to occur over the next reporting period.

**Task 6: Stakeholder Communication**

No work is expected to occur over the next reporting period.

## **Task 7: Reporting**

Task 7 has been subdivided into 2 subtasks. Planned activities for the subtasks are as follows:

### **Subtask 7.1 Project Monitoring Procedures**

The project timeline will continue to be reviewed frequently. The project budget will continue to be monitored on a weekly basis using the SwRI Project Cost System. Project activity will continue to be summarized in status reports for review by TWDB.

### **Subtask 7.2 Project Deliverables**

The fifteenth (current) progress report (covering Period 9, FY 2017) will be submitted to TWDB during Fiscal Year 2017, Period 10.

Team members will consider and incorporate feedback regarding the Draft Methods Report from TWDB as appropriate. The Draft Final Report will be completed and submitted to TWDB.

## **4.0 Problems/Issues and Actions Required/Taken**

No problems or issues were encountered during this period.

**Table 1. Project Budget Versus Expenses**

<b>Task</b>	<b>Description</b>	<b>Task Budget</b>	<b>Spent This Period Per Task</b>	<b>Total Spent Per Task</b>	<b>Remaining Task Budget</b>
1	Project Management	\$22,640.00	\$1,531.77	\$18,403.80	\$4,236.20
2	Data Acquisition and Method Development	\$134,555.00	\$8,053.50	\$118,786.07	\$15,768.93
3	Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes	\$116,878.00	\$0.00	\$67,236.96	\$49,641.04
4	Delineate Potential Production Areas	\$40,001.00	\$3,771.93	\$6,031.32	\$33,969.68
5	Determine the Amount of Brackish Groundwater that can be Produced without Causing Impact on Lateral and Vertical Fresh Water	\$56,740.00	\$36,499.48	\$56,126.92	\$613.08
6	Stakeholder Communication	\$35,631.00	\$1,491.22	\$1,586.97	\$34,044.03
7	Reporting	\$13,555.00	\$8,233.14	\$17,818.14	-\$4,263.14
Total		\$420,000.00	\$59,581.04	\$285,990.18	\$134,009.82